

**BEHAVIOURAL, PHYSICAL AND ENVIRONMENTAL DIFFERENCES
BETWEEN RACES OF THE YELLOW-BREASTED APALIS APALIS
FLAVIDA IN KENYA**

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Lewis (1982) described the structure and possible functions of the vocal duets of the Yellow-breasted Apalis *Apalis flavida flavocincta* in the Nairobi area, and noted that birds (possibly of other races) in drier areas have rather different calls. At that time, several points were unclear, for example, whether the 'galloping' calls (Lewis 1982) of dry country birds are consistently different from those of their moister country kin; and whether duetting ever occurs in dry country members of this species, for example during the wet periods when they are breeding. This note reports the results of a further six years' of observations, including particularly frequent and extensive travel in various habitats during the last three years.

MOIST, STABLE ENVIRONMENTS

Table 1. *Apalis flavida* duetting of the type described by Lewis (1982) in moist, stable environments

Locality	co-ordinates	altitude (m)	Atlas square*
Maralal town	1°06N 36°42E	1980	38D
El Karama Ranch, Nanyuki	0°12N 36°55E	1740	50D
Lake Nakuru N.P.	0°22S 36°05E	1760	62A
Lake Naivasha	0°46S 36°21E	1880	62C
Naro Moru	0°10S 37°01E	1980	63A
Near Mountain Lodge, Mt Kenya	0°18S 37°09E	2020	63A
Muruka	0°55S 37°04E	1500	63C
North Mara	1°15S 35°02E	1680	74A
Bridge over Mara River	1°33S 35°02E	1460	74C
Cottar's Camp, Mara	1°35S 35°29E	1980	74C
Narok	1°05S 35°52E	1980	74B
Nairobi	1°17S 36°49E	1680	75B
Limuru	1°06S 36°39E	2200	75B
Near Athi River town	1°25S 37°01E	1500	76C
Pooha, Machakos	1°35S 37°14E	1680	76C
South of Bissel	2°10S 36°47E	1680	87B

*Lewis & Pomeroy (1989)

The males of these duetting birds have a black, elongated oval breast spot, whereas the females have a much smaller, circular black spot (Jackson 1938; specimens in the National Museum, Nairobi). These areas are within the range quoted for *A. f. flavocincta* by Britton (1980), apart from Maralal, which Britton lists as a locality for *A. f. malensis*.

But this latter race lacks the distinctive breast spot features of the Maralal birds and is an inhabitant of dry bush country, so that it is likely that *flavocincta* occupies the moist heights of Maralal mountain, while *malensis* is in the surrounding, lower altitude dry bush.

No seasonality has been noted in the duetting and, in those areas visited more frequently, it seems to occur throughout the year.

The 16 localities listed in Table 1 are at altitudes of 1460–2200 m and, using the environmental overlays of Lewis & Pomeroy (1989), 12 of the 13 quarter square degrees are subhumid–humid, and in areas that receive more than 500 mm of rainfall per year. The single exception is Bissel (87B) which, although at 1600 m altitude, is in a semi-arid, 250–500 mm rainfall area.

Hence duetting occurs in relatively moist and high altitude environments that, as in the case of the closely studied Nairobi birds, are sufficiently stable to provide food resources that enable each pair to remain as a pair, and to inhabit their territory, throughout the year (Harcus 1977, Lewis 1982). These areas very rarely experience the irregular rainfall and long, harsh dry seasons that are so common in lower altitude, arid and semi-arid regions.

Plausible functions of the duet in these stable environmental situations include (a) preservation of the pair bond throughout the year; (b) synchronization of the pair's gonadal cycles throughout the year; and (c) to enable the pair to remain in contact when widely dispersed on their territory (references in Lewis 1982). It is significant that duetting continues even when these stable environments are uncharacteristically dry.

DRIER, LESS STABLE ENVIRONMENTS

The much more rapid 'gallop', *crit-crit-crit*....., that was noted for Ishiara (Lewis 1982), has been found to be widespread in dry bushed and wooded country. It is possible that this call is given by both sexes (see below). As in the birds around Nairobi, these 'dry gallops' may be initiated by a rasping, two-second *terrrrsk* call, and this call is occasionally heard on its own. However, no duetting of the Nairobi type, nor female 'laughing' calls (Lewis 1982), have ever been heard in these arid–semi-arid, bushed and wooded habitats, even when they are uncharacteristically lush after rains. Particularly thorough coverage of these birds has been attained by T. Stevenson (pers. comm.), who is resident at semi-arid Baringo.

These areas certainly include the race *A. f. malensis* and possibly other races too, but the distributions of these subspecies are not precisely defined in Kenya, particularly in the south-east.

The breast ornament of these birds varies. In some pairs, the (presumed) male has a small, circular dark spot in the centre of the breast, while his mate has no breast marking at all. That a bird with no breast ornament in the garden of Lake Baringo Club gave the 'dry gallop', may mean that both sexes produce this call. Some birds in these dry areas, from example also at Lake Baringo, have a very diffuse dark bar or elongated oval on the breast: these markings are much paler than those of *A. f. flavocincta*.

The 12 localities in which this 'dry gallop' call has been heard are at altitudes of 150–1400 m (Table 2). Of the 14 quarter square degrees, 11 are in arid or semi-arid areas,

while the remaining three are subhumid. Thirteen of these squares have rainfall in the range 0–1000 mm per year.

Hence this type of non-duet calling occurs in lower altitude, less moist environments that may not produce food resources sufficient for pairs to remain on their territories throughout the dry (non-breeding) seasons. The absence of duetting may indicate that the pair bond is not maintained throughout the year. There are no data on the mobility of these dry country birds, apart from Lack's (1985) note of apparent May–October seasonality in the arid country of Tsavo East National Park.

Table 2. Records of 'dry gallop' calls by *Apalis flavida*

Locality	co-ordinates	altitude (m)	Atlas square*
B4 road S of Lodwar	2°35N 35°40E	760	25B
B4 road N of Sigor	1°38N 35°35E	1050	37B
Between Tot and Kolowa	1°13N 35°42E	1150	37D
Lake Baringo	0°38N 36°05E	970	50A
Samburu G.R.	0°40N 37°30E	850	51AB
Meru N.P.	0°05N 38°20E	500	52C
Ishiara	0°28S 37°48E	800	63B
Garissa	0°28S 39°38E	150	65B
Mwala	1°25S 37°28E	1400	76A
Daka Dakotha	2°15S 39°30E	150	90AB
Tsavo Safari Camp	2°39S 38°23E	520	89C
Kuranze Ranch	4°10S 38°08E	350	113B

*Lewis & Pomeroy (1989)

THE KATILU-KITO PASS DUETS

On 23 March 1986, near Katilu (2°10N, 35°27E), and during the following day on the Kito Pass (1°06N, 35°53E), D.J. Pearson, D.A. Turner and ADL encountered a different type of duet. The Katilu male had a thin, black bar on the breast, and the bird produced the fast 'gallop' typical of the dry country, as described above. The female had no breast ornament, and produced the duet by giving two or three, low, croaking *terrrrsk* calls during the male's 'galloping'. The Katilu country was open but green bush at 600–900 m, and there had been recent rain. The same duet was heard on the Kito Pass, at just under 1200 m. This area was very dry, with a little standing water in stream beds.

These duets were immediately distinctive to all three of us, and it seems unlikely that they have been overlooked in other dry country areas, particularly in the very well studied Baringo area.

DISCUSSION

Apalis flavida flavocincta shows significant differences from *A. f. malensis*, (and perhaps other dry country subspecies). These two races inhabit different environments, and have

differing breast ornamentation. The basic differences in the structures of their calls, i.e. duet as opposed to solitary calling, may point to differing social structures. It is particularly significant that *flavocincta* continues to duet during unusually dry conditions, whereas *malensis* does not duet even when its habitats are uncharacteristically moist and verdant.

Interbreeding of these two very different forms would appear to be unlikely, and they may be nearing, or be at, species status.

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